

COOLING SYSTEM AND COOLED ELECTRONICS ASSEMBLY EMPLOYING PARTIALLY LIQUID FILLED THERMAL SPREADER

Abstract of the Disclosure

A cooling system and method, and a cooled electronics assembly are provided employing a thermal spreader having an inner chamber evacuated and partially filled with a liquid. A phase separator is disposed within the thermal spreader to at least partially divide the inner chamber into a boiling section and a condensing section, while allowing vapor and liquid to circulate between the sections. A heat extraction assembly is disposed at least partially within the inner chamber to extract heat therefrom. When the thermal spreader is coupled to a heat generating component with the boiling section disposed adjacent thereto, liquid within the thermal spreader boils in the boiling section, producing vapor which flows upward from the boiling section and causes liquid to flow into the boiling section from the condensing section, thereby providing circulatory flow between the sections and facilitating removal of heat from the heat generating component.